

REMARKS

Claims 1-43 remain pending in the present application. New claims 44-45 have been presented. Therefore, claims 1-45 are pending in the present application.

The Examiner rejected claims 1-8, 13-14, 16-18, 20-23, and 38-43 under 35 U.S.C. § 102(e) as being unpatentable over U.S. Patent No. 6,773,931 (*Pasadyne*) and in view of U.S. Patent No. 6,407,396 (*Mih*). Applicants respectfully traverse this rejection.

In the Final Office Action dated August 11, 2005, the Examiner asserted that the arguments previously provided by the Applicants have been fully considered but they were not persuasive because the prior art allegedly read on certain features of the Applicants' invention. Applicants respectfully assert that it is not sufficient that the prior art read on "certain" features of the Applicants' invention. The prior art must anticipate or make obvious all of the elements of the claims of the present invention to support Examiner's rejections. Applicants respectfully assert that the prior art cited by the Examiner in the Final Office Action dated August 11, 2005, do not anticipate or make obvious all of the elements of the claims of the present invention. Additionally, the prior art cited by the Examiner (*Pasadyne* and *Mih*), when combined, do not make obvious all of the elements of the claims of the present invention.

Further, the Examiner has not provided sufficient evidence or arguments to support the requirement when providing an obviousness argument that sufficient motivation is present in the prior art to cause one skilled in the art to modify the prior art to make obvious all of the elements of the claims of the present invention. Those skilled in the art would not be motivated to read upon to combine the disclosures of *Pasadyne* or *Mih* to make obvious the elements of the claimed invention. The Examiner fails to provide sufficient evidence or arguments to support the

contrary. The Examiner uses hindsight reasoning to select bits and pieces of various subject matter in an attempt to make obvious all of the elements of the claims of the present invention. Additionally, even if *Pasady*n and *Mih* were combined, all of the elements of the claimed invention are not taught, disclosed, or suggested by *Pasady*n, *Mih*, or their combination. *Pasady*n is directed to dynamic adjustment of a process target. In contrast, *Mih* is directed to the measurement of a first feature in relation to a second pattern being superimposed upon a first feature using metrology data. Those skilled in the art would not combine the dynamic adjustment disclosure of *Pasady*n with the superimposition of the first feature of *Mih* to teach, disclose, or make obvious all of the elements of the claims of the present invention. Without improper hindsight reasoning, there is absolutely no evidence or suggestion of motivation to combine such disparate subject matter to make obvious all of the elements of the present invention.

Mih is directed to a metrology system that utilizes a scanning electron microscope for scanning the first pattern through an aperture defined by the inner edges of a photoresist section of a second pattern. In stark contrast to the subject matter of *Mih*, *Pasady*n is directed to a dynamic adjustment processing of a process target setting based upon analysis of electrical data and metrology data. Those skilled in the art would not find sufficient motivation, without using improper hindsight reasoning, to merge the subject matter of scanning electron microscope for scanning patterns through an aperture (*Mih*) with the merging of correlation of electrical test data with a batch of workpieces (*Pasady*n), to make obvious all of the elements of claim 1 of the present invention. The Examiner fails to provide sufficient arguments or evidence to the contrary. Therefore, those skilled in the art would not combine *Mih* and *Pasady*n to make

obvious all of the elements of claim 1 of the present invention. Additionally, contrary to the Examiner's assertion in the Final Office Action dated August 11, 2005, even if *Pasady* and *Mih* were to be combined, all of the elements of claims of the present invention would not be made obvious as described below.

Pasady is directed to a dynamic adjustment process of a process target, which is in contrast with the dynamically adjusting metrology of routing based upon correlation of tool state analysis to a batch of workpiece, as called for by claim 1 of the present invention. *Pasady* clearly does not disclose or make obvious the dynamic metrology routing process of claim 1 of the present invention. Additionally, the deficit of *Pasady* is not made up for by *Mih*. The Examiner asserted that *Pasady* discloses a tool state analysis except for teaching a dynamic metrology routing adjustment process based upon the tool state analysis. The Examiner then cited *Mih* to disclose a dynamic metrology routing adjustment process pointing to the Abstract section for support of such an assertion. Applicants respectfully assert that *Mih* does not disclose any subject matter that even remotely relates to a dynamic metrology routing adjustment process. In fact, *Mih* does not even disclose or hint towards any subject matter relating to metrology routing. *Mih* merely discloses superimposing apertures for viewing multiple patterns on different layers.

Mih is directed to measuring critical dimension features of multiple patterns and performing overlay measurements of one pattern with respect to another. *Mih* discloses the relationship between a first and a second pattern associated with a first and a second level. See, Figure 3; col. 4, lines 52-63. *Mih* is directed to critical dimension of the first pattern being seen through apertures 24 and 26 formed in the second level, superimposed over. See col. 4, lines 54-

61. *Mih* discloses a metrology system using a scanning electron microscope for scanning the first pattern through an aperture defined by the inner edges of photoresist section 12 of the second pattern. See, col 5, lines 17-22. *Mih* is directed to the measurement of the first feature and its relationship to the second pattern being superimposed over the first feature, using metrology data to perform such analysis. *Mih* clearly does not disclose metrology routing of any sort. Furthermore, *Pasadyne* merely calls for dynamic adjustment processing of semiconductor wafers, which includes dynamically adjusting the process target setting based upon analysis of electrical data and metrology data. See, col. 3, lines 50-67. *Pasadyne* is directed to the merging or correlating of electrical test data with a batch of workpieces and then dynamically adjusting target settings. See, for example, col. 11, lines 39-53 and Figure 9. Clearly, *Pasadyne* does not disclose the dynamic metrology of routing adjustment process of claim 1 of the present invention.

As described above, *Mih* does not even remotely begin to make up for the deficit of *Pasadyne*. *Mih* is merely directed to metrology measurements relating to multiple features that are superimposed on one over the other. As disclosed in *Pasadyne*, based upon the correlation of the data, *Pasadyne* discloses performing a persistent calculation function for adjusting control parameters. Hence, *Pasadyne* is directed towards adjusting parameters or settings, wherein the dynamic metrology routing called for by claim 1 of the present invention calls for performing adjustment of the metrology routing. Therefore, *Pasadyne* does not disclose or make obvious all of the elements of claim 1 of the present invention and *Mih* does not make up for the deficit of *Pasadyne*. Therefore, claim 1 of the present invention is allowable.

As described above, *Pasady*n simply does not disclose or make obvious all of the elements of claim 1 of the present invention and *Mih* does not make up for the deficit of *Pasady*n. As described herein, *Mih* merely discloses metrology data relating to various patterns that are overlaid or superimposed over each other. Therefore, *Mih* does not disclose subject matter relating to dynamic metrology routing adjustment processes. Therefore, the combination of *Pasady*n and *Mih* does not disclose, suggest, or make obvious all of the elements of claim 1 of the present invention.

Similarly, claim 13 also calls for adjusting metrology routing based upon a correlation of tool health assessment to a batch of workpieces which, as described above, is not disclosed, taught, or made obvious by *Pasady*n, *Mih*, or their combination for at least the reasons cited herein. Also, claim 16 calls for means for performing the dynamic metrology routing adjustment, which calls for correlating tool state analysis to a batch of workpieces to adjust a metrology routing, which is not disclosed, taught, or made obvious by *Pasady*n, *Mih*, or their combination for at least the reasons cited herein. Furthermore, claims 17, 22, 26, 38, and 42 call for a methods systems, apparatus, and a computer readable program storage device that calls for adjusting a metrology routing based upon correlation of tool state analysis to a batch of workpieces, which are not taught, disclosed, or made obvious by *Pasady*n, *Mih*, or their combination for at least the reasons cited herein. Therefore, for at least the reasons cited above, claims 1, 17, 22, 26, 38, and 42 (all as amended) are all allowable.

Applicants respectfully assert that since the Examiner asserted that claim 9, for example, among other claims, has subject matter that would be allowable, Applicants respectfully assert that claim 38 would also be allowable. For example, claim 9, since the Examiner said it is

allowable, as to limitation of modifying the position of the batch in a metrology queue to claim 1, is also present in claims 38 and 42. Therefore, in light of the Examiner's assertion that claim 9 comprises allowable subject matter, claims 38 and 42 also contain subject matter. Therefore, claims 38 and 42 of the present invention are also allowable. Additionally, newly added independent claim 44 also comprises subject matter (modifying the position of the batch in queue) that the Examiner stated was allowable. Therefore, for at least the reasons cited herein, claim 44 is also allowable.

Independent claims 1, 13, 16, 17, 22, 26, 38, 42, and 44 are allowable for at least the reasons cited above. Additionally, dependent claims 2-8, 14, 18, 20-21, 23, 25, 27-33, 39-41, 43, and 45 which depend from independent claims 1, 13, 17, 22, 26, 38, and 42, and 44 respectively, are also allowable for at least the reasons cited above.

Reconsideration of the present application is respectfully requested.

Applicants acknowledge that the Examiner objected to claims 9-12, 15, 19, 24, and 34-37, as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In light of the arguments presented above, Applicants respectfully assert that claims 1-44 are allowable. In light of the arguments presented above, a Notice of Allowance is respectfully solicited.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Houston, Texas telephone

number (713) 934-4069 to discuss the steps necessary for placing the application in condition for allowance.

Respectfully submitted,

WILLIAMS, MORGAN & AMERSON, P.C.
CUSTOMER NO. 23720

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By: 

Jason C. John, Reg. No. 50,737
10333 Richmond, Suite 1100
Houston, Texas 77042
(713) 934-4069
(713) 934-7011 (facsimile)
ATTORNEY FOR APPLICANT(S)